Ice cream illustrates why you don't need to fear zero rating

Bronwyn Howell

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On a recent panel, AEI's Roslyn Layton (http://www.techpolicydaily.com/internet/three-myths-about-zero-rating/) and Stanford University Law School's Barbara van Schewick (https://medium.com/@schewick) debated the impact of zero rating (http://livestream.com/internetsociety2/sotn2016) on competition among application and content providers. The debate was noteworthy for more than just the icy weather conditions that necessitated panelists unable to present in person to video stream themselves in.

Layton argued that zero rating allows competing providers to differentiate their offerings from established providers. In this way, new entrants can attract users in a crowded marketplace where existing providers have already cultivated application-usage habits and preferences. Layton cited strong advocacy for zero rating by small ISP entrants as evidence that it facilitates, more than harms, competitive entry. Van Schewick countered that all Internet users should be able to access the content of the "whole Internet"on identical terms. Established providers (notably ISPs) could use zero rating to make it more expensive for consumers to access nonproprietary content or new content where its providers could not pay to subsidize users' transport costs.

At face value, there is some economic merit in both of these arguments. However, the merit lies in the particular model of competition that is presumed to apply in the relevant markets.

Finding the economic model that best describes the market

For van Schewick's argument to hold, the relevant economic model is "perfect competition."All providers supply undifferentiated products in a static market where

there is perfect information and no transaction costs. Consumers are indifferent to the offerings of all providers. Consumers would only prefer A over B if A was cheaper. Preventing A from discounting the price (predatory pricing) keeps either provider from gaining market power by differentiating otherwise identical products.

An example is helpful in illustrating this point: Suppose there are only two ice cream sellers in a market, A and B. Both sell the exact same flavor of ice cream, and consumers, who all enjoy the one flavor exactly to the same degree, will end up buying from whoever can sell it cheaper.

As any graduate of a basic economics class can tell you, there is no such thing as a market that displays the characteristics of "perfect competition"in the real world. This is true also for the Internet ecosystem. Netflix and Facebook are clearly not interchangeable services, and different people will value them differently. Furthermore, the market is far from static; new content and applications appear on the market on a daily basis, and old ones fall by the wayside.

How about a model that adds product differentiation?

Perhaps Hotelling's spatial differentiation model is a better fit. This model assumes that both consumers and producers know the relative strength of customers' preferences for the different variations, and they each know where the best matches will be made. As a result, they will match up in a manner that maximizes total welfare. As new variations are developed, customers migrate freely to their new preferred variant.

Returning to our analogy above, assume that the two ice cream sellers are actually different, and customers know which they prefer. A is initially the only provider and has 100 percent market share. When B enters at the same price as A, then all those preferring B will switch. If A can maintain market share by dropping its price by only a small amount, then the products are near-perfect substitutes. That is, price rather than taste is the characteristic valued most highly by consumers. But the more different the products are, and the more highly consumers value the characteristic that draws them to prefer one variant over the other, the greater is the welfare added by that differentiation, and the harder it will be for A to prevent switching by dropping price alone. Those preferring B will be prepared to pay a higher price for it, even though they could pay less for A. In this case, preventing price discounting by A will not alter the preference exhibited for B. Imposing zero rating in this context will not alter outcomes.

However, even Hotelling's spatial differentiation model fails to capture the true characteristics of most relevant markets. In reality, customers typically don't know their preferences and valuations for new differentiated characteristics, and hence

which variant (at the same price) offers them the higher welfare, without trying out the available options.

Taking it one step further: Monopolistic competition

This leads us to monopolistic competition, where each variant has some market power over its existing customers because of differences in consumer preferences (tastes) and imperfect information.

Assume only ice cream A is available at first. All consumers who value it sufficiently at the price offered buy it, but some would get more welfare from B. However, as they don't know whether they prefer B until they have tried it, there is a risk that if they buy B and discover that they actually prefer A, they have foregone the welfare that could have been gained by buying A. If the two ice creams are offered at the same price, then B in fact faces a barrier imposed by A's established market share because of imperfect information. The welfare-enhancing solution is for the new entrant to underwrite consumers' risk (expected welfare reduction) of finding they don't prefer the new variant by offering either a free taste or a price discount. Consequently it is the entrant, and not the incumbent, who will prefer zero rating. Preventing the pricing strategy preserves the incumbent's existing market power. By analogy, banning zero rating will actually harm the development of welfare-enhancing competition. This is the case Layton argued in the State of the Internet debate.

The regulatory scoop

Perusing the economic arguments appears to reinforce the FCC's current position. The welfare effects of zero rating are highly contingent on the circumstances in which it is applied. Different economic models show that zero rating is more beneficial the more heterogeneous the options are (or the greater the real difference consumers perceive between them) and the less informed consumers are about the value the differences offer them. This suggests that zero rating is more likely to be an issue for concern in the provision of a handful of homogeneous and easily described and defined services (cloud storage, for example) than in the provision of highly differentiated individual and content-based applications that make up the majority of the Internet's content. Until more information is available about consumer preferences, case-based competition law provides more flexibility to take account of different contexts than imposing potentially costly prohibitions that favor homogeneity over differentiation.

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Is zero-rating just another form of (pro-competitive) bundling?

Bronwyn Howell

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Zero-rating — when internet service providers (ISPs) exempt the data used to access specific applications from counting against the data cap in a consumer's data plan — has proven to be a controversial subject. Regulators around the world are being called on, if not to intervene in markets to prevent its occurrence, at least to evaluate specific cases, such as Facebook's Free Basics or T-Mobile's Binge-On (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2587542). The general conduct standard in the Federal Communications Commission's 2015 Open Internet Order (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2757391) and the Body of European Regulators for Electronic Communication's Guidelines on Implementation (http://berec.europa.eu/eng/document_register/subject_matter/berec/download/0/6075-draft-berec-guidelines-on-implementation_0.pdf) reflect this activity. The importance of the topic is reflected in the panel session devoted to it today at the International Telecommunications Society's European Regional Conference in Passau (http://www.itseurope.org/2017/wp-content/uploads/2017/07/PassauProgrammefinal25July2017.pdf), Germany, where academic, policy, and industry representatives will discuss the range of economic, legal, and technical challenges posed to regulation and how regulatory authorities around the world are responding.

(http://www.aei.org/wp-content/uploads/2017/08/zero_rating_data_streaming_bundling_500x293.png)

@AsadAkhram via Twenty20

The underlying premise of the network neutrality debate — of which zero-rating forms a part — is the belief that all bits of data on the internet should be treated equally (or neutrally) in respect to their physical handling (i.e., no blocking, throttling, etc.) and financially (i.e., no price discrimination). However, the internet is replete with examples of price discrimination, which do not appear to have attracted the same political attention as zero-rating. Yet arguably zero-rating is just a variation of bundling — a form of price discrimination.

Bundles proliferate

Almost certainly, most of the ardent proponents of zero-rating purchase their fixed internet access in a bundle with some other service — such as a cable television subscription, a voice telephony connection, or even a mobile subscription. The discounted price for the bundle immediately creates price discrimination as the consumer effectively pays less for a bundled element compared to those who purchase the same element separately. Offering one more element for free in a bundle of items already purchased has hardly created a ripple amongst regulators — indeed, the Telecommunications Regulation Handbook (http://www.itu.int/pub/D-PREF-TRH.1-2011) produced by the World Bank, International Telecommunications Union, and others clearly states "bundling is generally a pro-competitive and customer-friendly strategy. As such, bundling does not call for regulatory intervention."

Rather, the matter that exercises the Telecommunications Handbook authors is the question of tying — in which a service provider makes the purchase of one product or service over which it has market power (the tying good) conditional on the purchase of

a second competitively supplied product or service (the tied good). Tying may allow a provider with market power in one market to give itself an advantage in another.

But bundling is not tying

Tying is primarily a strategy employed to maximize profits. However, there are only limited circumstances where profits will be enhanced — for example, in which the demands for the two products are complementary, end users consume the two products together (e.g., network subscription and calls). Tying will not increase profits above the level already possible for the single goods when two products are consumed in fixed proportions (e.g., one mobile connection and one fixed-line connection) or when the demands for the two products are independent and consumers are unlikely to consume them jointly (e.g., telephone calls and television subscriptions). Thus, firms with market power will often have no incentive to engage in a tying strategy.

Furthermore, tying is only likely toexclude competitors from the market if they are unable to overcome the loss of sales to customers who have been successfully tied. This may occur when competitors face economies of scale and the loss of sales causes their average costs to increase, or when the tied good is associated with network externalities and the loss of sales to some customers causes others to leave. And even when tying does have an exclusionary effect, it is likely to arise not as an explicit objective but as an unintended consequence of a profit-maximizing strategy.

Zero-rating is most often bundling, not tying

In light of these regulatory recommendations, it is apposite to consider the cases of zero-rating when the interest groups called for regulatory intervention. They are almost always examples of bundling rather than tying. For example, consumers are not typically forced to buy Binge-On with their T-Mobile subscription, and Binge-On subscribers are not forced to use T-Mobile capacity to access Binge-On content. They can access content using a tablet or laptop (https://www.t-mobile.com/offer/binge-on-streaming-video.html) via Wi-Fi (including accessing the internet over a fixed-line connection) or roaming without even having to use T-Mobile's LTE network (albeit that the resolution defaults to the highest available based on the terms of the ISP or roaming partner concerned).

So under these circumstances, it begs the question of where the competitive harm from zero-rating might arise. Is the relevant market power that of the mobile operators or of Binge-On over its consumers (given that there is only one Binge-On, just like there is only one Adobe Acrobat)? If the networks over which Binge-On can be accessed are effectively competitively supplied (i.e., consumers can choose between T-Mobile and another ISP to access Binge-On content by opting to use Wi-Fi), the market power that matters is that of Binge-On rather than the mobile networks. It is not specifically a

concern of telecommunications regulation but, more properly, one dealt with under the provisions of competition (antitrust) law.

As the Telecommunications Regulation Handbook says, bundling is customer friendly and as such does not call for regulatory intervention.

Would a ban on zero rating throw the baby out with the bathwater?

Bronwyn Howell

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Harvard's Susan Crawford has sounded the alarm on zero-rated data, calling the practice "pernicious,""dangerous"and "malignant."However, calls to ban an activity such as zero rating (https://medium.com/backchannel/less-than-zero-199bcb05a868) must be treated carefully, since it is rare that a banned activity is unequivocally harmful. Zero rating has been demonstrated under some circumstances to both enhance competition (http://www.techpolicydaily.com/internet/zero-rating-narrowing-digital-divide-mobile-broadband-market/?utm_source=newsletter&utm_medium=paramount&utm_campaign=cict) and benefit consumers (http://www.techpolicydaily.com/communications/zero-understanding-of-zero-rating/). Therefore, zero rating is an imperfect proxy for the harm Crawford perceives. By pursuing such a proxy, Crawford's proposition threatens to throw the baby out with the bathwater.

At the crux of the matter is that social welfare - the metric antitrust economists use to assess the merits of intervening in a market - is not an easily observable, definable or verifiable object. When the objective defies definition, a proxy must be used. But the proxy may or may not be a close representation of the objective actually sought. Competition has become a proxy for welfare, because more competition is often consistent with greater welfare. But "competition"too is difficult to accurately define, describe and measure, as it is a process and not an end state. It can also be harmful and beneficial. As "good"competition is very difficult to distinguish from "harmful"competition, legislation typically focuses on promoting welfare-enhancing competition rather than describing in detail the specific behaviors that may or may not be anti-competitive. The courts can then examine the merit of each allegation on its own particular facts, to assess whether the alleged behavior is anti-competitive and welfare-harming.

However, a popular exception to this tendency is collaboration (sometimes termed "joint or co-ordinated action"). A large number of historic cases have found one type of collaboration - cartels - to be significantly harmful to welfare. Hence, collaboration (an observable and verifiable activity) which reduces competition (not so easily observable and verifiable) is deemed per se illegal. However, collaboration does not always reduce competition, and it is not always bad for consumers. For example, it is not illegal for handset manufacturers to collaborate on the development of joint standards for operating software. Such collaboration encourages more prolific application development and reduces consumer lock-in to one handset manufacturer.

Even cases where anti-competitive collaboration is proven are not straightforward. A prominent collaboration case in New Zealand (http://www.iscr.org.nz/f64,1798/newsletter_2.pdf) occurred when gas retail company executives jointly decided to stop providing free car-washes when customers filled the tank. The free washes, initially offered by one company, rapidly became the industry norm. The practice eroded profit margins, wasted resources (soap and water) and raised environmental concerns when car washes were provided that would never have been consumed if they weren't free. The court found the executives guilty of both collaboration and reducing competition. However, as their activities were demonstrated to have increased total welfare, the fine was set at the low end of the spectrum. Nonetheless, the oil companies were penalized for making society better off, because the banned activities were poor proxies for harm to that objective.

The case is perverse but instructive in the context of the zero rating debate. Zero rating, like collaboration, is clearly not always harmful to welfare. Neither is it always employed with an anti-competitive purpose in mind. As zero rating is a bad proxy for welfare harm or even anti-competitive behavior, it seems dangerous to make it a per-se illegality without at least putting some conditions in place to allow for its legitimate, welfare-enhancing application. If Professor Crawford's underlying concern is that that zero rating could be used for anti-competitive purposes, but others have shown that it can also be pro-competitive then, like collaboration, a conditional prohibition on the anti-competitive use only would be less harmful - and less controversial - than an outright ban.

However, unlike collaboration, zero rating doesn't have a history that would warrant this special treatment. Indeed, the potential harms Crawford cites are, so far, largely hypothetical. In the highly innovative Internet ecosystem, a whole range of new business models have emerged. To separate one of these out for special treatment, while leaving other, equally contentious practices such as usage-based tariffs and

content bundling alone, is inconsistent. It is also unnecessary, when the tools to deal with the supposed harm are already present under standard competition law.

But that, of course, presumes Professor Crawford's call for a ban is based on pro-welfare and pro-competition concerns, rather than the interests of a particular stakeholder group seeking to impose its preferences on the structure and operation of the Internet no matter the consequences.

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